

REMARKS

The Applicants thank the Examiner for the quick and courteous non-final Action and the entry of the Amendment on 19 July 2011.

Claims 1-12 remain in the application.

Claims 1-12 are rejected.

Claim 1 is amended; no new matter has been added.

Claims 13-20 are canceled without prejudice to Applicants' right to present such claims at a later time in a continuing application.

35 U.S.C. §102(b) Rejection

The Examiner has rejected claims 1-12 under 35 U.S.C. 102(b) as allegedly being anticipated by Johannes, US Patent 4053142. Regarding claims 1 and 2, the Examiner contends that Johannes '142 teaches an apparatus for enhancing solubility of a solute in a solvent (abstract; col. 1, line 64 - col. 2, line 13), the apparatus comprising a solvent and/or solute inlet (18 of figure 1; col. 2, lines 54-68) having a fluidizing unit provided with a single series of tangential slots (16 of figure 1; col. 2, lines 1-4 and 41-46) which allegedly creates one vortex of rotating flow in the solute and/or solvent (16 of figure 1; col. 2, lines 1-4 and 41-46 allegedly teach a rotational flow of the first fluid) between the fluidizing unit and a discharge pipe (in mixing chamber 10 of figures 1-2; col. 2, lines 41- 46), allegedly as in claim 1; and in which a fluid interfacial or boundary layer exists within the supposed vortex where enhanced mass transfer, or dissolution of solute into the solvent takes place (abstract; col. 1, line 64 - col. 2, line 13 allegedly teach that this is a feature of the invention when the second component is added), as in claim 2.

Other details of the Examiner's rejection may be had with reference to the 35 U.S.C. §102(b) rejection on pages 2-4 of the non-final Office Action dated 14 September 2010, the final Action dated 24 February 2011, the Advisory Action dated May 4, 2011 and the non-final Office Action of July 29, 2011.

In response to the Applicants' arguments filed 07/19/2011, the Examiner notes that they have been fully considered but they are not persuasive.

The Examiner finds that the Applicants argue that a second set of slots are present in the device of Johannes '142. The examiner agrees; however, the Examiner contends that

this argument fails to disqualify Johannes '142 as prior art. The Examiner notes that "Applicants' claims limit 'a single series of tangential slots' but do not require that *only* a single series of tangential slots be present." (Emphasis in original.) As such, the presence of additional tangential slots in Johannes '142 does not remove it from consideration as prior art.

The Applicants respectfully traverse. A patent claim is anticipated, and therefore invalid, only when a single prior art reference discloses each and every limitation of the claim. *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1047, 34 U.S.P.Q.2d 1565 (Fed. Cir.), cert. denied, 116 S.Ct. 516 (1995).

The Examiner's attention is respectfully directed to the amendment to independent claim 1 herein where the fluidising unit is now defined as "provided with only a single series of tangential slots which creates one vortex of rotating flow in the solvent and/or solute between the fluidising unit and a discharge pipe". Support for this amendment may be found in the application as filed on page 13, lines 10-13; and page 13, lines 21 to page 14, line 7. The fact that the series of tangential slots is *only* a *single* series of tangential slots may also be readily seen from the FIGS. as originally filed, specifically FIGS. 1 and 2, and schematically in FIG. 4. Thus, the Applicants respectfully submit that the amendment to claim does not constitute an improper insertion of new matter.

The Applicants respectfully note that the Johannes only discloses two series of openings, not *only* a *single* series as recited in the amended claims. The Examiner's attention is respectfully directed to Johannes' FIGS. 1 and 2, and column 2, lines 34-68:

FIGS. 1 and 2 are section views respectively of a presently preferred embodiment of the invention. In the fluid mixing device shown, two fluid components are effectively and completely mixed by turbulence created in an annular mixing chamber **10**. A first fluid component is supplied under pressure to a first inlet tube **12** from which the first fluid passes into an annular outer chamber **14**. As the outer chamber **14** becomes filled with fluid, the first fluid is forced through a *first series of ports 16*. The ports **16** are so oriented and arranged as to cause the first fluid to assume a generally clockwise (as seen from FIG. 1) rotational fluid flow pattern in the annular mixing chamber **10**. A second fluid is fed under pressure through a second inlet port **18** to a cylindrical inner chamber **20**. As the inner chamber **20** fills with fluid, the second fluid is forced through a *second series of ports 22* oriented and ar-

ranged so as to cause the second fluid to flow in a generally counter-clockwise (as seen from FIG. 1) fluid flow pattern in the annular mixing chamber **10**.

In the annular mixing chamber **10**, therefore, the rotational fluid flow patterns of the first and second fluid components (clockwise and counter-clockwise respectively) crash head on and create a tremendous amount of shearing turbulence. *This turbulence is further increased by orienting the ports **16** and **22** as shown in FIG. 2*, thereby tending to cause the fluid components in the annular mixing chamber to initially flow towards the bottom portion **24** of the mixing chamber **10** before being discharged from the top portion of the mixing chamber **10** through an outlet tube **26**. The turbulence thus created is sufficient to thoroughly mix the first and second fluid components. As stated, the fluid mixture is discharged from the fluid mixing device through an outlet tube **26**. (Emphasis added.)

The Examiner's attention is also respectfully directed to the claims of Johannes, particularly claims 1 and 2 where a first and second series of ports is always required. Consistently, Johannes' only Figures, FIG. 1 and FIG. 2 *both* show a *first* series of ports **16** and a *second* series of ports **22**.

Since Johannes consistently, repeatedly and exclusively requires the presence of two series of ports, the Applicants respectfully submit that the single prior art reference does not disclose each and every limitation of the invention, namely *only* a *single* series of tangential slots. Johannes does not disclose *only* a *single* series of tangential slots, but instead everywhere and consistently teaches two series of ports.

The Examiner on page 5 of the instant Office Action states that "Applicants' claims limit 'a single series of tangential slots' but do not require that only a single series of tangential slots be present." The Applicants respectfully submit that now the claims do "require that *only* a single series of tangential slots be present" (emphasis in original). The Applicants have amended the claims in the way helpfully suggested by the Examiner to overcome the single Johannes reference. Thus, the Applicants additionally respectfully submit that the presence of additional tangential slots in Johannes '142 removes it from consideration as prior art.

Thus because the single prior art reference does not disclose each and every limitation of the amended claims, the Applicants respectfully submit that the instant rejection should be withdrawn. Reconsideration is respectfully requested.

It is respectfully submitted that the amendments and arguments presented above place the amended claims in condition for allowance. Reconsideration and allowance of the remaining claims are respectfully requested. The Examiner is respectfully reminded of his duty to indicate allowable subject matter. The Examiner is invited to call the Applicants' attorney at the number below for any reason, especially any reason that may help advance the prosecution.

Respectfully submitted,
JAMES EDWARD DELVES, et al.

/David L. Mossman/

David L. Mossman
Registration No. 29,570
Attorney for Applicants
Telephone No. 512/219-4026
Facsimile No. 512/219-4036

Mossman, Kumar & Tyler
P. O. Box 421239
Houston, Texas 77242
E-mail: dmossman@mktlaw.us.com